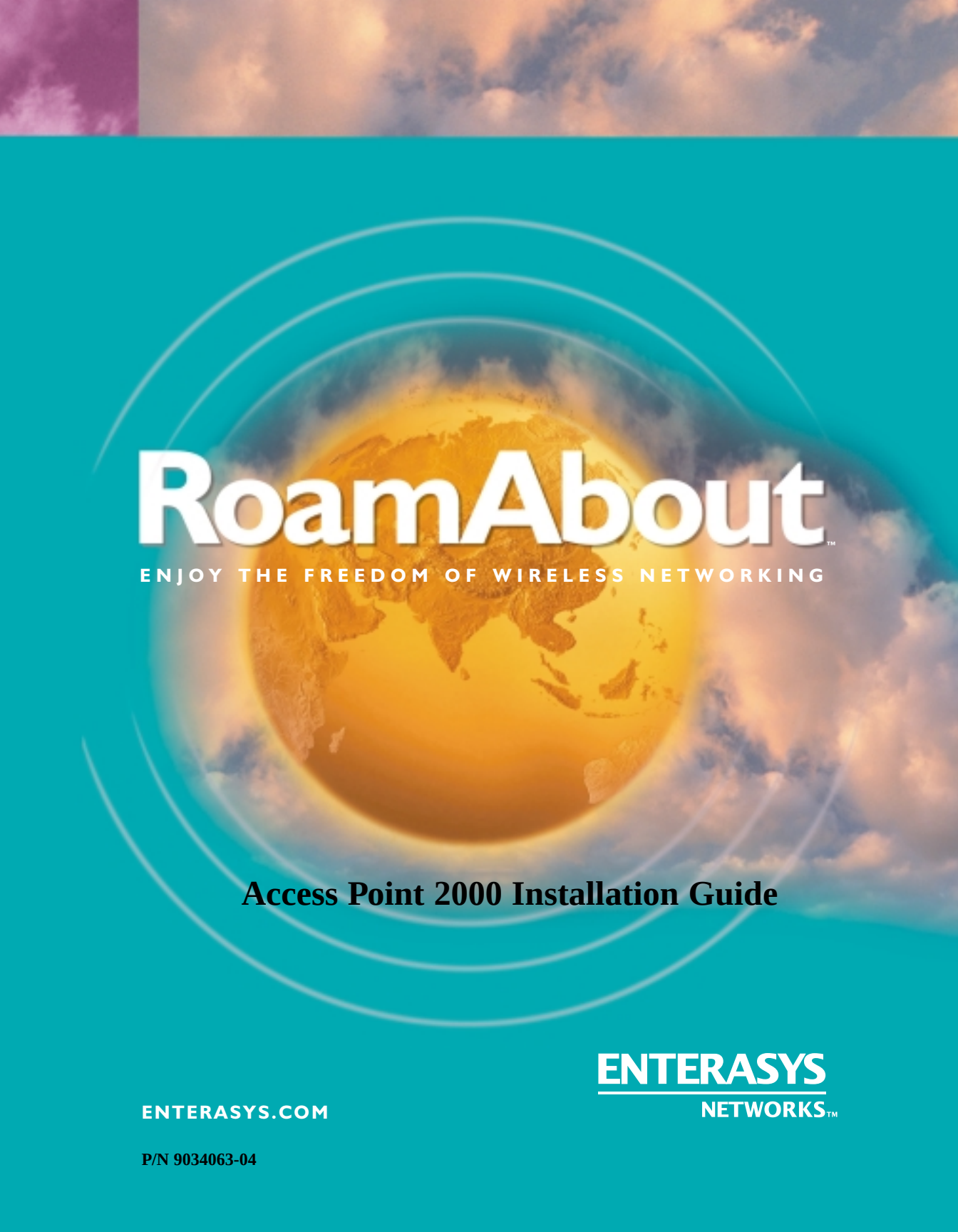

Access Point 2000 Installation Guide

ENTERASYS NETWORKS

ENTERASYS.COM

P/N 9034063-04

ELECTRICAL HAZARD: Only qualified personnel should perform installation procedures.

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Enterasys Networks
35 Industrial Way
Rochester, NH 03867

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Order Number: 9034063-04

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FCC Notice

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

CAUTION: Changes or modifications made to this device which are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Industry Canada (Canada) - Class B Computing Device:

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

Europe - EC Declaration of Conformity

This device complies with Low Voltage Directive 73/23/EEC and EMC Directive 89/336/EEC.

VCCI Notice

This is a Class B product based on the standard of the Voluntary Control Council for Interference from Information Technology Equipment (VCCI). If this is used near a radio or television receiver in a domestic environment, it may cause radio interference. Install and use the equipment according to the instruction manual.

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取扱説明書に従って正しい取り扱いをして下さい。

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Preface

Purpose of the Manual

This manual describes how to install and set up the RoamAbout Access Point 2000. It also includes problem solving, and connector pin assignment information.

Intended Audience

This manual is intended for use by personnel who will install and set up the RoamAbout Access Point 2000.

ELECTRICAL HAZARD: *Only qualified personnel should perform installation procedures.*

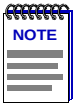
Organization of this Document

This document is organized as follows:

Section	Description
Chapter 1	Contains pre-installation information you should know before you install the RoamAbout Access Point 2000. This includes the site requirements and specifications.
Chapter 2	Presents detailed step-by-step procedures to select, configure, and install the correct power, cabling, and wiring for your RoamAbout Access Point 2000.
Chapter 3	Contains detailed step-by-step procedures to install the RoamAbout Access Point 2000.

Document Conventions

The following icons are used in this document:

Icon	Meaning
	ELECTRICAL HAZARD: Warns against an action that could result in personal injury or death.
	WARNING: Warns against an action that could result in personal injury or death.
	CAUTION: Contains information essential to avoid damage to the equipment.
	**NOTE:** Calls the reader's attention to any item of information that may be of special importance.

Associated Documents

The following table lists the RoamAbout products and information location. The documentation, drivers, and utilities can also be downloaded from the RoamAbout Wireless web site.

Check the RoamAbout Wireless web site regularly for product upgrades.

http://www.enterasys.com/wireless

Component	Information Location
RoamAbout Access Point	*RoamAbout Access Point 2000 Hardware Installation Quick Start*
RoamAbout Access Point Manager	*RoamAbout 802.11 Wireless Networking Guide*
RoamAbout 802.11 PC Card Drivers	*RoamAbout PC Card Drivers and Utilities Client CD-ROM Kit* *RoamAbout 802.11 PC Card Drivers and Utilities Setup and Installation Guide*
RoamAbout Client Utility	*RoamAbout PC Card Drivers and Utilities Client CD-ROM Kit*
RoamAbout Work Station Update	*RoamAbout PC Card Drivers and Utilities Client CD-ROM Kit*
RoamAbout ISA Adapter Card	*RoamAbout ISA Adapter Installation*
RoamAbout PCI Adapter Card	*RoamAbout PCI Adapter Installation*
RoamAbout Outdoor Solution	*RoamAbout Outdoor Antenna Site Preparation and Installation Guide*

Getting Help

For additional support related to this device or document, contact Enterasys Networks using one of the following methods:

World Wide Web: http://www.enterasys.com/wireless	
Phone:	North America: (603) 332-9400 Europe: 353 61 701 910 Asia: +800 8827-2878
Internet mail:	support@enterasys.com

To send comments or suggestions concerning this document, contact the Enterasys Networks Technical Writing Department via the following e-mail address: **TechWriting@enterasys.com**

Make sure you include the document Part Number in the e-mail message.

Before calling Enterasys Networks, please have the following information ready:

- Your Enterasys Networks service contract number
- A description of the problem
- A description of any action(s) already taken to resolve the problem
- The serial and revision numbers of all involved Enterasys Networks products in the network
- A description of your network environment (for example, layout and cable type)
- Network load and frame size at the time of trouble (if known)
- The device history (for example, have you returned the device before, is this a recurring problem)
- Any previous Return Material Authorization (RMA) numbers

Chapter 1

Preparing for Installation

This chapter describes basic considerations for successfully installing the RoamAbout Access Point 2000 hardware. Before installing the Access Point (AP), you must complete the following tasks:

- Review the site requirements.
- Select the location to install the AP.
- Unpack the AP and check the contents of the shipment.

In This Chapter

Information in this chapter is presented as follows:

Topic	Page
Reviewing the Site Requirements	**1-2**
Unpacking and Inspecting	**1-4**
Basic Components	**1-4**
Options	**1-6**
Other Considerations	**1-7**

If installing the Access Point in a building-to-building configuration, refer to the *RoamAbout Outdoor Antenna Site Preparation and Installation Guide* for the proper antenna cabling and grounding procedures.

After you install the Access Point, refer to the *RoamAbout 802.11 Wireless Networking Guide* to configure the Access Point parameters.

Reviewing the Site Requirements

Please review the site requirements before you install the Access Point.

Hardware Requirements

Table 1-1: AP Physical Specifications (with plastic cover)

Parameter	Access Point
Width	17.9 cm (7.06 in)
Height	16.8 cm (6.64 in)
Depth	4.1 cm (1.63 in)
Weight	.86 kg (1.9 lb)

Electrical and Environmental Requirements

Ensure that the environmental and electrical requirements are within the ranges described in **Table 1-2** through **Table 1-4**.

Table 1-2: Environmental Specifications

Parameter	Description
Operating Environment	
Temperature[1]	5°C to 50°C (41°F to 122°F)
Relative humidity	15% to 90% (non-condensing)
Altitude above sea level	2.4 km (8000 ft.)
Air flow	Convection cooled
Nonoperating Environment	
Temperature	-40°C to 66°C (-40°F to 151°F)
Relative humidity	15 to 90% (non-condensing)
Altitude	Up to 4.9 km (16,000 ft)

[1]For sites above 4900 m (16,000 ft.), decrease the operating temperature specification by 1.8°C for each 1000 m or 3.2°F for each 3200 ft.

Table 1-3: AP Power Supply Specifications (US)

Parameter	Value
Input voltage	120 VAC
Input Current at 120 V	220 mA
Frequency	60 Hz
Output voltage	24 VAC
Output current (maximum)	500 mA

Table 1-4: AP Power Supply Specifications (World)

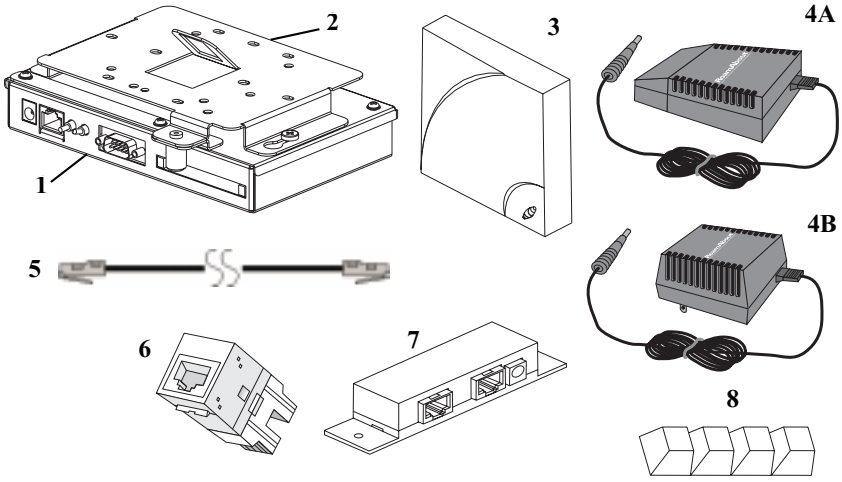
Parameter	Value
Input voltage	100 VAC to 240 VAC
Input Current at 120 V	400 mA
Frequency	47 Hz to 63 Hz
Output voltage	24 VDC
Output current (maximum)	625 mA

Unpacking and Inspecting

Physically inspect all cartons for shipping damage. Report any damage to your shipping carrier. Also verify that you have received the correct basic components and options as listed on the following pages. Report any discrepancies to your Enterasys Sales Representative.

Basic Components

The basic components required for installation include an Access Point and a PC Card.



Access Point

Verify that the following components shipped with your Access Point:

#	Description	Part Number
1	Access Point	CSIWS-A
2	Wall/Ceiling Mounting Bracket	9901132
3	Plastic Cover NOTE A security box, sold separately, is available. Contact your Enterasys Representative for more information.	8020216

#	Description	Part Number
4A	Power Module (120/240 VAC)*	CSIWS-PS1
4B	Power Module (120 VAC)*	5652041 (Model No. : FE4830 240A050)
5	Cable, RJ45 Male to RJ45 Male, 7 inch	9360119-7"
6	RJ45 to Punch-Down Conn. (Mod Tap)	6370006
7	Remote Power Adapter	8917544
8	Four Rubber Feet	5020005

* Only use UL Listed Class 2 power supplies with this product.

PC Card

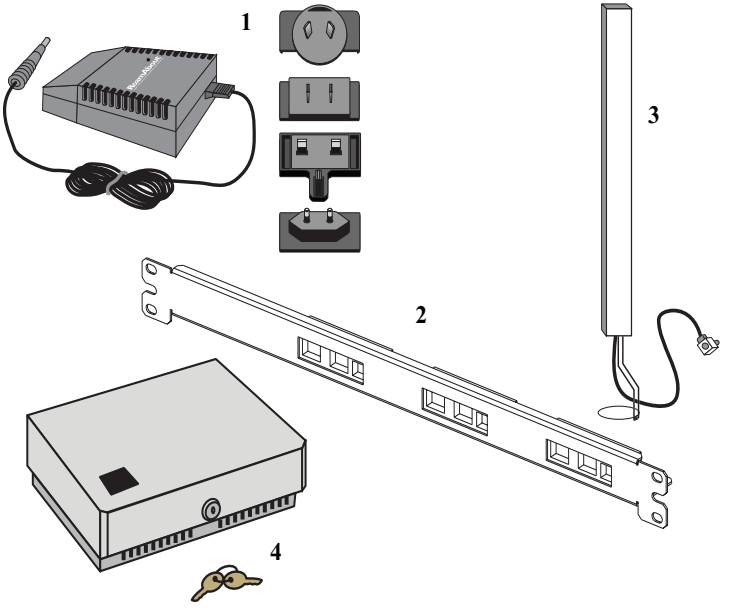
Verify that you have received the correct PC Card for your particular system configuration:

Description	Part Number			
	FCC	ETSI	France	Japan
11 Mbit/s PC Card (40-Bit encryption)	CSIBD-AA	CSIBD-AB CSILD-AB*	CSIBD-AF CSILD-AF*	CSIBD-AJ CSILD-AJ*
11 Mbit/s PC Card (128-Bit encryption)	CSIBD-AA-128	CSIBD-AB-128 CSILD-AB-128*	CSIBD-AF-128 CSILD-AF-128*	CSIBD-AJ-128 CSILD-AJ-128*

* This part number is for the Hi-Gain matched RoamAbout PC Card, which is required in the specified countries when connecting the PC Card to the RoamAbout 14 dBi directional antenna.

Options

The following options are available for the Access Point:



#	Description	Part Number
1	Redundant Power Supply (with four International Power Adapters)	CSIWS-PS1
2	Rack Mount Kit	CSIWS-RM
3	Range Extender Antenna	CSIBB-IA
4	Security Box	CSIWS-WM

Other Considerations

Enterasys Networks recommends that you test the coverage area before you permanently install the Access Point. The coverage area is where wireless clients can be physically located and still connect to the Access Point. Coverage area is determined by a number of factors, including the speed of the RoamAbout PC Card, physical obstructions, and noise levels.

If possible, temporarily connect the Access Point and use the RoamAbout utilities described in the *RoamAbout 802.11 Wireless Networking Guide* to determine the actual coverage area. Using these tools can help you determine the best place to mount the Access Point.

If you are using an outdoor antenna with the Access Point, consider the following factors:

- Type of antenna.
- Outdoor antenna installation.
- Grounding system. The Access Point and the outdoor antenna must use the same grounding system. Refer to the *RoamAbout Outdoor Antenna Site Preparation and Installation Guide* for the detailed procedures to install outdoor antennas.

Chapter 2

Cabling and Wiring

This chapter presents detailed step-by-step procedures to select, configure, and install the correct power, cabling, and wiring for your RoamAbout Access Point 2000.

In This Chapter

Information in this chapter is presented as follows:

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Selecting a Power Configuration	2-2
Remote Power Adapter Installation	2-3
Rack Mount Kit Installation	2-5
Power Module Installation	2-7
Selecting the Correct Ethernet Wiring Configuration	2-8
CAT 5 Cabling Standards	2-9
MOD-TAP Connector Wiring	2-15
Power and Connector Specifications	2-17

CAUTION: *The Enterasys 5652041 North American AC Power Supply (for the CSIWS-AA Access Point) has an internal 1-ampere non-replaceable fuse. If the fuse blows due to remote power cable miswiring, the power supply must be replaced.*

The Enterasys 5652042 International DC Power Supply (ships with the CSIWS-AB Access Point) and the CSIWS-PS1 Redundant DC Power Supply (for either the CSIWS-AA or CSIWS-AB) have overload protection. If an overload occurs because of miswiring or some other fault, the power supply voltage folds back to protect the power supply, the site wiring, and the Access Point from damage.

Selecting a Power Configuration

The power configurations available for the Access Point include local power, remote power, and redundant power.

Local Power Configuration

In the local power configuration, the Access Point receives operating power directly from *one local source* (such as a power module connected to a nearby wall outlet). The output plug of the power module is connected directly into the Access Point chassis-mounted power connector.

Remote Power Configuration

In the remote power configuration, the Access Point receives operating power over the Ethernet cable from *one remote source* (such as a power module installed in the wiring closet or other remote location). This option requires installing the remote power adapter in the same location as the power module. The output of the power module is connected to the remote power adapter. The Ethernet interface cable also plugs into the remote power adapter. Another Ethernet cable is connected between the adapter and the Access Point to provide input/output signals and power.

The Enterasys 5652041 North American AC Power Supply (for the CSIWS-AA Access Point) has an internal 1-ampere non-replaceable fuse. If the fuse blows due to remote power cable miswiring, the power supply must be replaced.

If you are using the remote power adapter with the Enterasys North American AC Power Supply, label the cable at the opposite end from the power adapter (Access Point, MOD-TAP connector, or wall jack) to ensure that this cable is not connected to another device. The procedures in **Chapter 3** *offer sample text.*

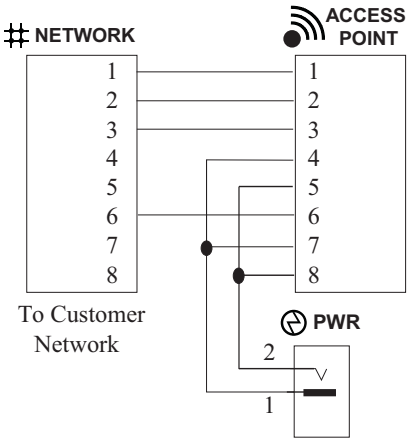
Enterasys offers an optional rack mount kit that allows installation of up to three remote power adapters into one standard rack-mount panel.

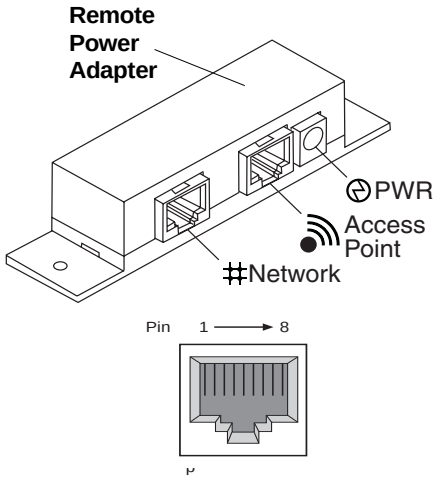
Redundant Power Configuration

The Access Point can be connected to an independent source of local power *and* to an independent source of remote power. If one of these power sources goes down, the Access Point continues uninterrupted operation with power received from the other (redundant) power source.

Remote Power Adapter Installation

The remote power adapter provides operating power to the Access Point using the Ethernet cable. The adapter receives input power (via the PWR jack) from either the power module supplied with the Access Point or directly from the site facility. If using the power module, install the adapter within six feet of an AC power outlet. The network interface cable plugs into the NETWORK jack, and the Access Point cable plugs into the ACCESS POINT jack.

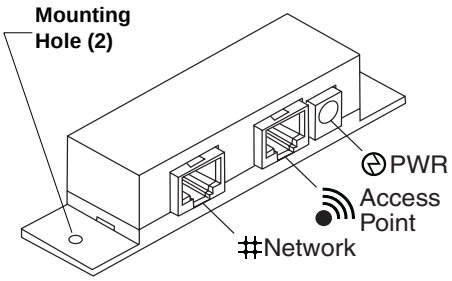




Pin	Network Connector	Access Point Connector	Power Connector
1	XMIT Data Positive	XMIT Data Positive	
2	XMIT Data Negative	XMIT Data Negative	
3	RCV Data Positive	RCV Data Positive	
4	No Connection	Remote Power 1	
5	No Connection	Remote Power 2	
6	RCV Data Negative	RCV Data Negative	
7	No Connection	Remote Power 1	
8	No Connection	Remote Power 2	
1			Remote Power 1
2			Remote Power 2

Remote Power Adapter Installation Procedure

Use the following procedure to install the remote power adapter.

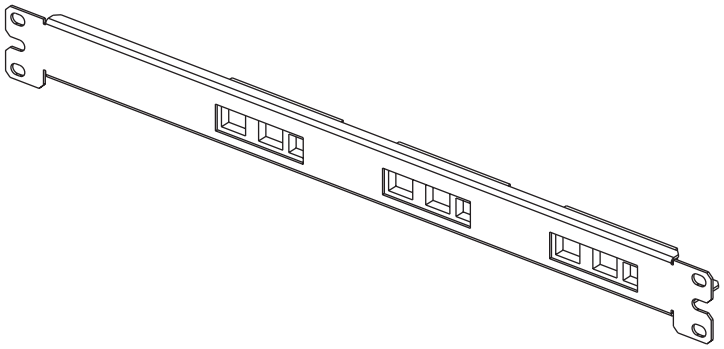
Step	Action
1	If available, use a cable tester to check the cable wiring to the Access Point. Check continuity and pairing.
2	Select a mounting location: • Close to the Ethernet wiring panel or Ethernet port. • Within six feet of an AC power outlet (if remote power is used).
3 **4** **5**	Secure the remote power adapter. If necessary, use the two wall anchors provided in your installation kit. Insert the Ethernet cable connector into the NETWORK jack. Insert the Access Point cable connector into the ACCESS POINT jack.  *Before you connect to the remote power adapter, verify that the wired network connector is inserted into the NETWORK jack, and the Access Point is connector is inserted into the ACCESS POINT jack.*
6	**Proceed to Chapter 3, Installing the Access Point.**

Rack Mount Kit Installation

Overview

The rack mount kit allows you to install up to three remote power adapters into one standard rack-mount panel to provide for the operation of up to three Access Points.

The information presented in the **Remote Power Adapter Installation on page 2-3** applies to each of the three remote power adapters in the rack mount kit.



The rack mount panel installation procedure is on the next page.

Rack Mount Kit Installation Procedure

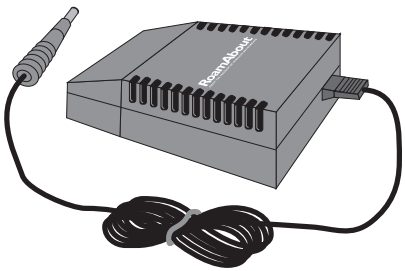
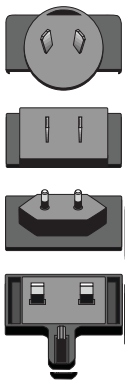
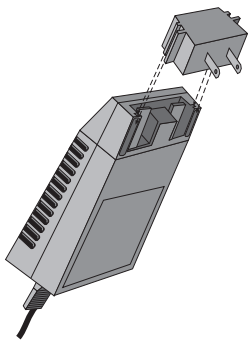
Use the following procedure to install the rack mount kit.

Step	Action
1	If available, use a cable tester to check the cable wiring to each Access Point. Check continuity and pairing.
2	Select a mounting location: • Close to the Ethernet wiring panel. • Within six feet of an AC power outlet (if remote power is used).
3	Install up to three remote power adapters within the rack mount panel. Use the screws provided in the rack mount kit to secure each remote power adapter to the rack mount panel.
4	Secure the rack mount panel to the rack using the screws provided in the kit.
5	Insert an Ethernet cable connector into the NETWORK jack of one of the remote power adapters.
6	Insert an Access Point cable connector into the ACCESS POINT jack of the same remote power adapter. *Before you connect to the remote power adapter, verify that the wired network connector is inserted into the NETWORK jack, and the Access Point is connector is inserted into the ACCESS POINT jack.*
7	Repeat Steps 5 and 6 for each Access Point.
8	**Proceed to Chapter 3, Installing the Access Point**.

Power Module Installation

Installing the 120/240 Power Module

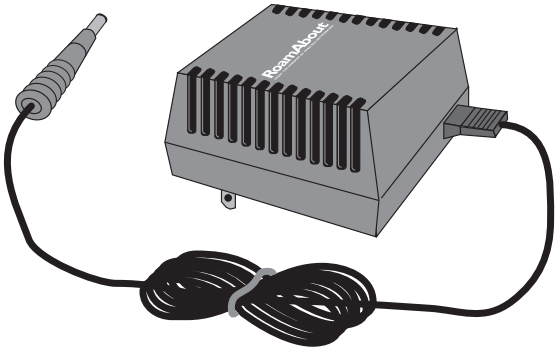
Perform the following steps to install the 120/240 Power Module:

Step	Action
1	Verify that you have the correct power module and adapters.  
2	Insert the appropriate adapter into the power module. ***Do not connect the power module to the primary source until instructed to do so.*** . 

Installing the 120 VAC Power Module

Do not connect the power module to the primary power source until instructed to do so.

The only installation required for the 120 VAC Power Module is to plug it into an appropriate wall outlet or extension cord.



Selecting the Correct Ethernet Wiring Configuration

If you have an existing 10BaseT Ethernet cable in place, you can connect the cable directly to the Access Point. You can also connect the Ethernet cable to the remote power adapter, then connect the remote power adapter to the Access Point.

If you plan to connect the Ethernet cable to the Access Point using a MOD-TAP connector, refer to the following sections for information on the CAT 5 cabling standards and wiring the MOD-TAP connector.

To ensure correct system operation, make sure you select the appropriate straight-through or crossover Ethernet wiring configuration for your installation.

Straight-Through Configuration

Use a straight-through wiring configuration if connecting:

- An Ethernet switching device to an Access Point.
- An Access Point to a remote power adapter.

Crossover Configuration

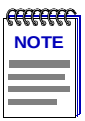
Use a crossover wiring configuration if connecting:

- An Access Point to an Access Point.
- An Access Point to an Ethernet card in a PC.

CAT 5 Cabling Standards

There are four common CAT 5 Cabling Standards. Three of these, EIA 568A, EIA 568B, and EIA 356A are recommended for RoamAbout Access Point 2000 installations. The fourth standard, USOC, has advantages when dealing with telephone wiring but is strongly *not recommended* for use in data applications.

- If new wiring is installed for the Access Point, it is extremely important to know which standard was used to install the existing wiring.
- It is also important that new wiring complies with and is tested to CAT 5 Cabling Standards. Miswiring of data pairs can result in a faulty Ethernet connection. Miswiring of power pairs could blow a fuse in the North American power supply. Crossing data and power wiring pairs could also result in a blown fuse.
- In the event of data or power miswiring when using RoamAbout power supplies, the North American power supply can blow a fuse and the International Power supply folds back. In either case, the Access Point is not damaged but the North American Power Supply may have to be replaced.
- If you are not using a RoamAbout power supply, miswiring of data or power may damage the Access Point. Again, use care when installing the wiring for the Remote Power feature.

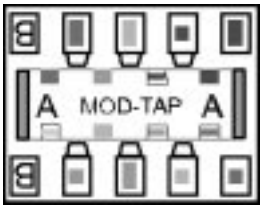


All CAT 5 information presented here also applies to CAT 3.

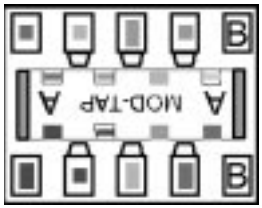
MOD-TAP Connector

Enterasys provides a MOD-TAP connector for terminating building wiring at the Access Point.

Before installing each individual color-coded wire into the MOD-TAP connector, determine the cable standard to be used (see pages **2-11**, **2-12**, and **2-13**). Based on the standard chosen, orient the connector in the "A" configuration or the "B" configuration position as shown below:



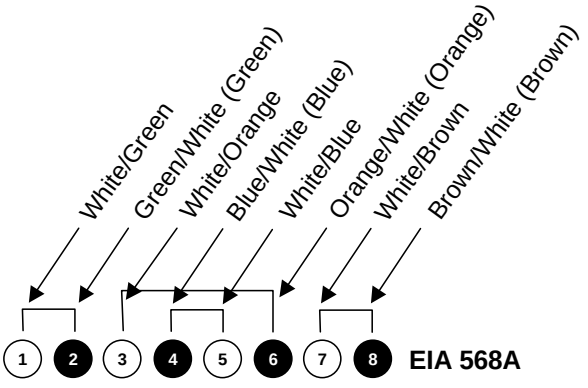
"A" Configuration



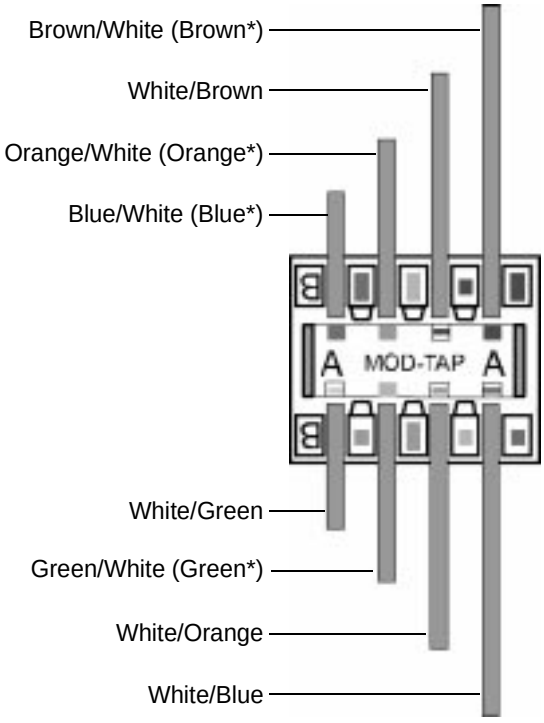
"B" Configuration

Cabling Standard EIA 568A

This is the latest sequence option as published in *TIA Commercial Building Cabling Specification 568A.* If using the Enterasys supplied MOD-TAP connector, use the "A" wiring configuration for the EIA 568A wiring scheme.



Cable Pairings/Pin Assignments

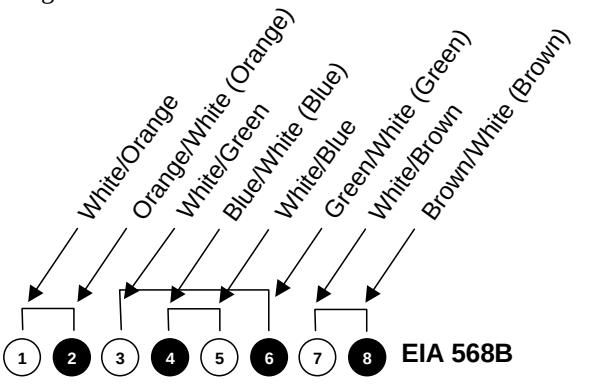


MOD-TAP Connector "A" Wiring Configuration

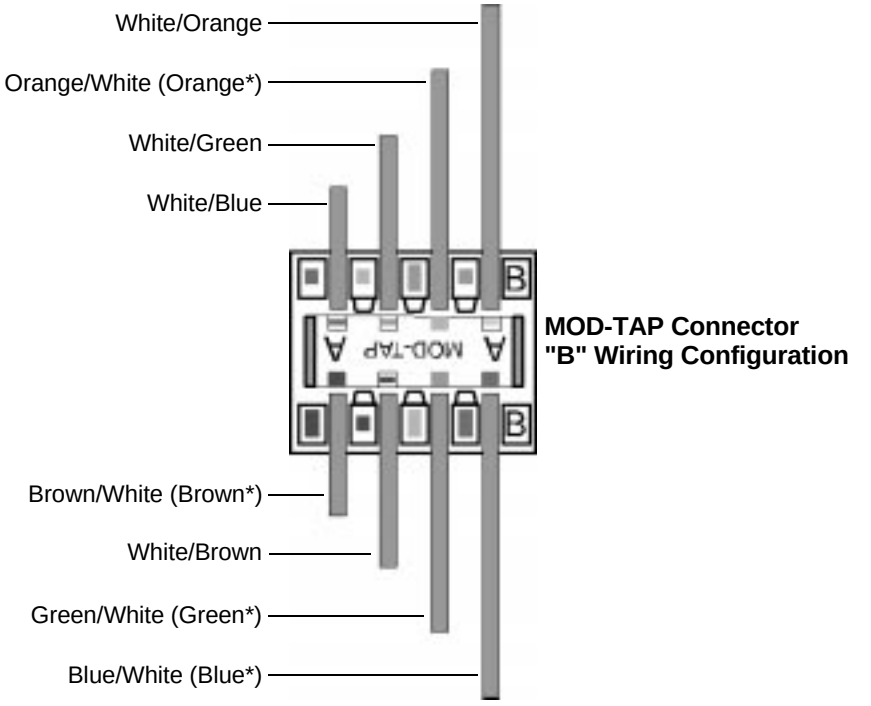
* *(color)* = Solid Color

Cabling Standard EIA 568B

This standard is the most widely specified sequence worldwide for new data installations. It is also a subset specified by the IEEE 802.3 10BASE-T Ethernet over twisted pair standard. If using the Enterasys supplied MOD-TAP connector, use the "B" wiring configuration for the EIA 568B wiring scheme.



Cable Pairings/Pin Assignments

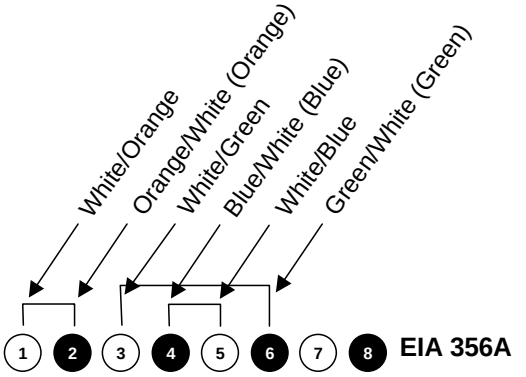


MOD-TAP Connector
"B" Wiring Configuration

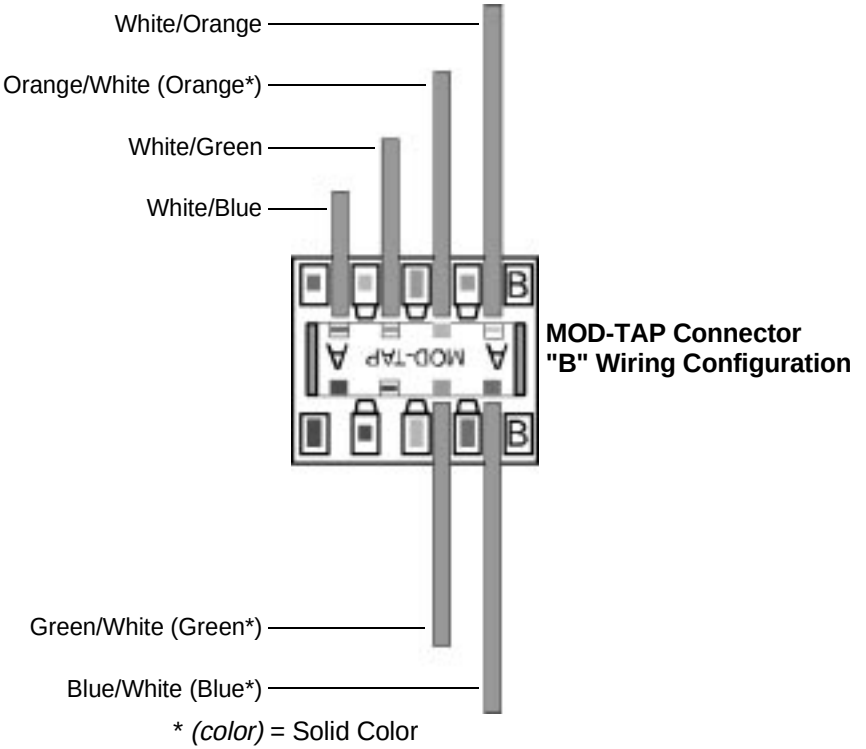
* *(color)* = Solid Color

Cabling Standard EIA 356A

This standard is a 3-pair subset of EIA 568B, leaving out the Brown/White - White/Brown pair. If using the Enterasys supplied MOD-TAP connector, use the "B" wiring diagram for the EIA 356A wiring scheme.



Cable Pairings/Pin Assignments

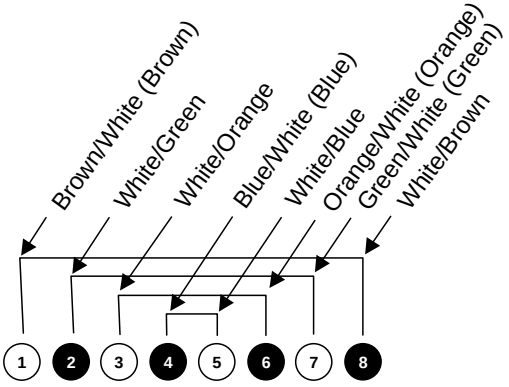


MOD-TAP Connector "B" Wiring Configuration

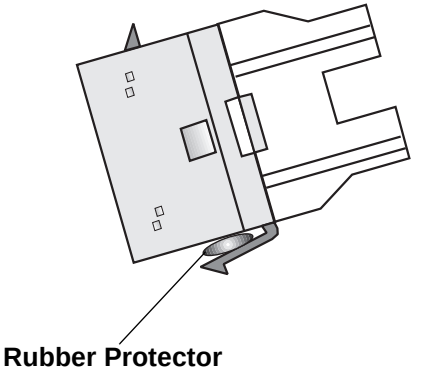
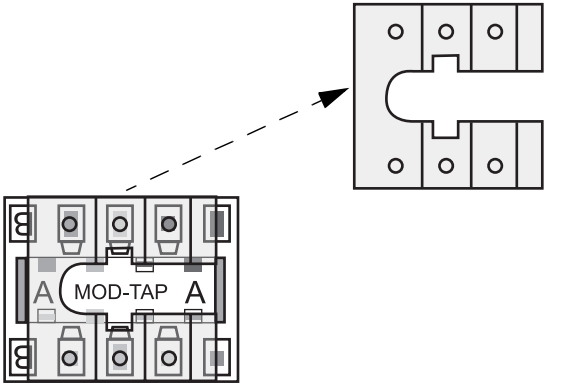
* *(color)* = Solid Color

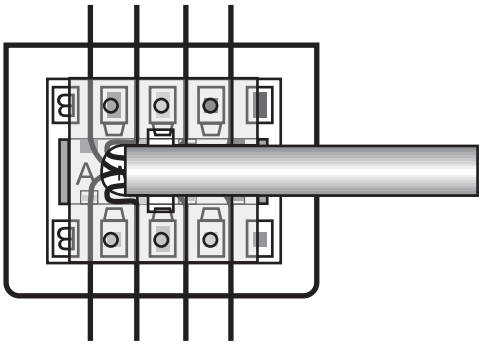
Cabling Standard USOC

This standard is shown for reference only and is strongly *not recommended* for use in data applications.



MOD-TAP Connector Wiring

1	Determine the appropriate CAT 5 Cabling standard for your installation: • Refer to "CAT 5 Cabling Standards" on page 2-9. • Select the cabling standard appropriate for your site.
2	Remove the rubber protector from the MOD-TAP connector.  **Rubber Protector**
3	Remove the plastic cover from the MOD-TAP connector. The plastic cover is also used as a MOD-TAP wire insertion tool. 
4	Locate the 10BaseT Ethernet network cable in the wall box.
5	Insert each Ethernet cable wire into the correct MOD-TAP connector slot according to the appropriate CAT 5 Cabling Standard for your site.

6	Secure each Ethernet cable wire in its correct MOD-TAP connector slot: • Do not remove insulation from any wire. • With each wire firmly in place in its correct slot, reinstall the MOD-TAP wire insertion tool/cover. • Secure all wires by pushing down firmly on the MOD-TAP wire insertion tool/cover. 
7	Install the remote power feature or the rack mount kit, if used. Refer to **Remote Power Adapter Installation on page 2-3** or the **Rack Mount Kit Installation on page 2-5**.
8	Use a CAT 5-compatible cable tester to verify continuity, correct pinouts, and correct pairings.
9	**Proceed to Chapter 3, Installing the Access Point**.

Power and Connector Specifications

Access Point power and connector specifications are listed in the table below. These specifications are provided for customers who want to provide their own site operating power for the Access Point.

If the remote power feature is used, Enterasys strongly recommends that you test the cable from the remote power adapter to the Access Point for continuity and correct pinout (straight-through cable) before power is applied. Enterasys assumes no responsibility if the specifications set forth below are not followed.

Specification	Rating
Power Consumption	5 Watts with 9 to 60 Volts DC 7 Watts with 10 Volts AC to 30 Volts AC
Voltage Input	9 to 60 Volts DC 555 mA @ 9 Volts DC to 83 mA @ 60 Volts DC Polarity Independent or 10 Volts AC to 30 Volts AC 500 mA @ 10 Volts AC to 167 mA @ 30 Volts AC
Regulation	Regulated or non-regulated UL Listed Class 2 power supplies may be used. Non-regulated power supply outputs should not exceed the stated maximum voltages and should not fall below the stated minimum voltages.
Redundant Power Application	Redundant power may be applied to the Access Point. Both power connections (front panel and Ethernet) are electrically isolated. Redundant power sources do not need to be matched for voltage or polarity. AC and DC sources may be used at the same time.
Power Connector	Coaxial Type Power Plug that mates with Switchcraft RAPC712 Jack (Switchcraft 760 or equivalent). Dimensions: Inside Diameter: 2.5 mm (0.100 inches) Outside Diameter: 5.5 mm (0.218 inches) Barrel Length: 9.5 mm (0.375 inches)

Chapter 3

Installing the Access Point

This chapter provides the procedures to install the Access Point 2000 and its options.

Make sure the site primary power for the Access Point conforms to the specifications detailed in **Chapter 2** - **Cabling and Wiring**.

If using a BootP/TFTP server and the Access Point Manager to configure the Access Points with IP addresses, you should configure the server BEFORE applying power to each Access Point. Upon power-up, each Access Point automatically sends a BootP request.

If you plan to use the Access Point Manager program, write down the MAC address listed on the front of the Access Point. For a LAN-to-LAN configuration, also write down the MAC address on the back of the PC Card, which is the wireless MAC address.

In This Chapter

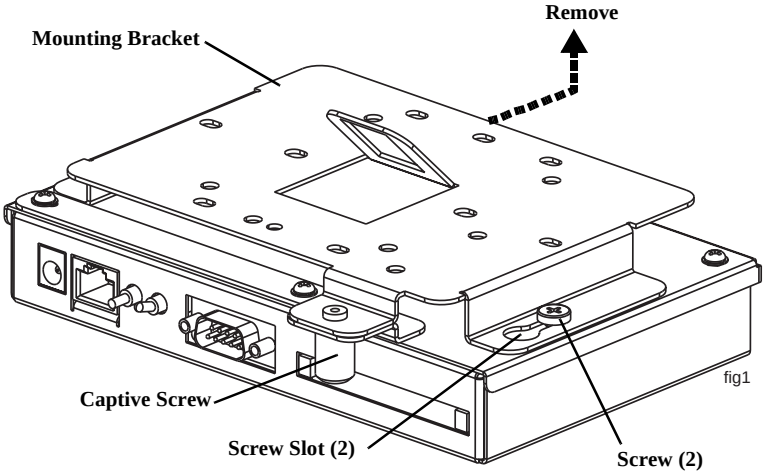
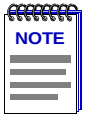
Information in this chapter is presented as follows:

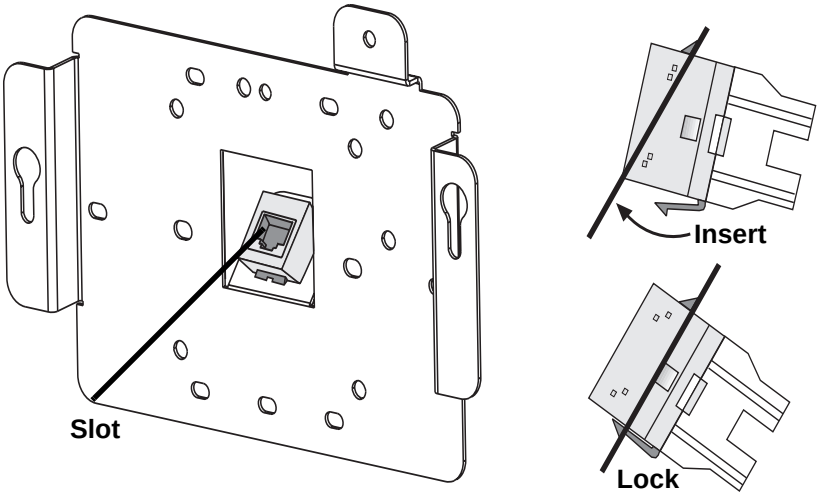
Topic	Page
Wall/Ceiling Outlet Box Installation	**3-2**
Surface Wallmount Installation	**3-10**
Desktop Installation	**3-18**
Connecting a Device to the Console Port	**3-25**
Verifying the Operation of the Access Point	**3-27**
Configuring the Access Point	**3-30**

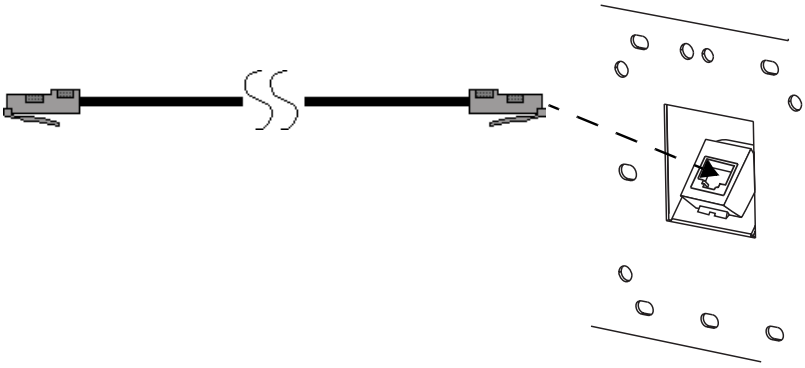
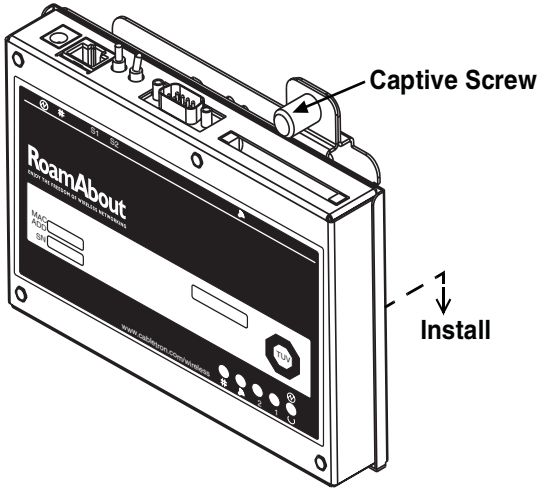
Wall/Ceiling Outlet Box Installation

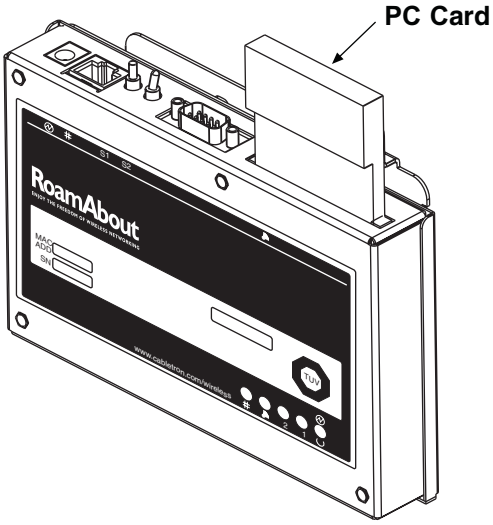
Follow the step-by-step procedure below to install the Access Point to an outlet box.

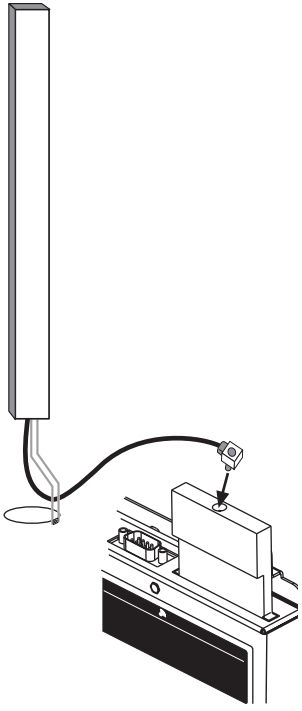
Step	Action
1	Make sure the site primary power for the Access Point conforms to the specifications detailed in **Chapter 2** - **Cabling and Wiring**.
2	Select a wall or ceiling outlet: • If using remote power, with internal 10BaseT Ethernet network cabling installed. • If not using remote power, within five feet of an AC electrical outlet: **a)** If using redundant power (connecting both local power and remote power). ***or*** **b)** If using the local power option and not using the remote power option.

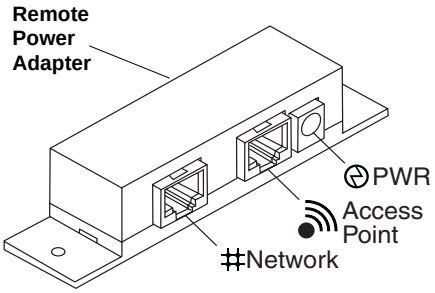
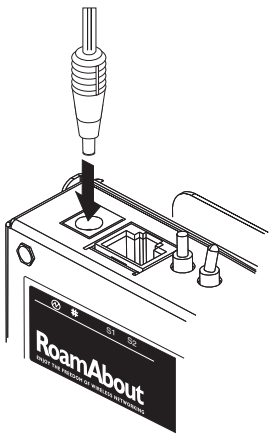
Step	Action
3	Remove the mounting bracket from the Access Point: • Completely loosen the captive screw. • Slide the bracket until the two screw slots are directly below the two screws. • Lift and remove the bracket from the Access Point. 
4	Connect the Ethernet cable, or wire the MOD-TAP connector: Refer to **MOD-TAP Connector Wiring on page 2-15**.
5	Before installing the metal mounting bracket, make certain that the mounting holes on the bracket line up with those on the outlet box. Additional holes may be drilled in the bracket to accommodate your particular installation.  *Remove all drilled material from the area.*

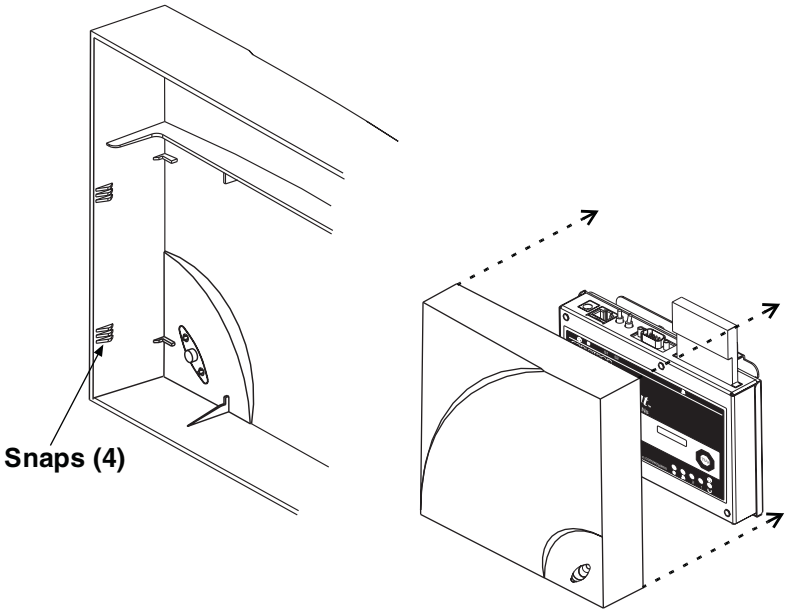
Step	Action
6	If using a MOD-TAP connector, install the wired MOD-TAP connector: • Insert the connector through the rear of the metal mounting bracket tab. • Push the connector until it securely locks into the tab. NOTE *Make sure the slot on the MOD-TAP connector is facing down.* 
7	Secure the mounting bracket to the wall outlet box.

Step	Action
8	If using a MOD-TAP connector, connect one end of the 7-inch RJ45 Male cable to the MOD-TAP connector. 
9	Secure the Access Point to the mounting bracket: • Insert the two Access Point shoulder screws into the two mounting bracket screw slots. • Slide the Access Point down. • Tighten the captive screw to secure the Access Point. 

Step	Action
10	Install the PC Card: • Position the card as shown below. • Carefully insert the card. • Press down firmly to seat the card. 

Step	Action
11	If you install the optional range extender antenna or outdoor antenna: • Remove the dust cover. • Insert the antenna plug into the PC Card connector. • Gently press down on the plug to secure the antenna connection. 

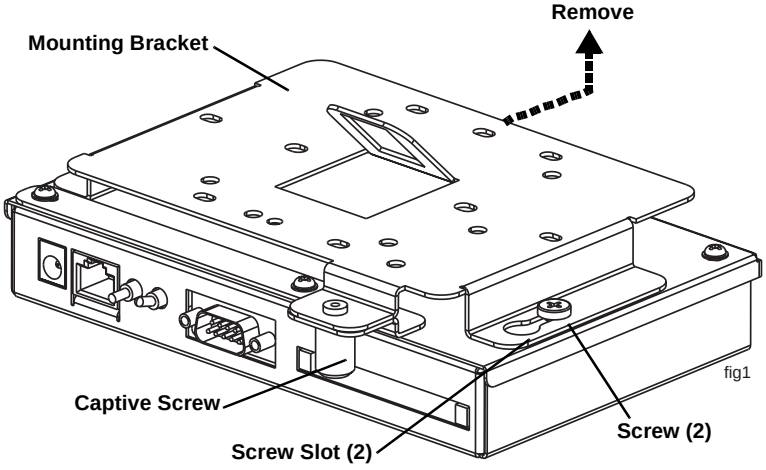
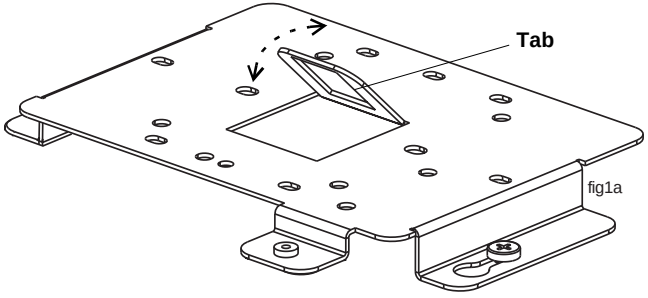
Step	Action
12	Install the remote power adapter or the rack mount kit, if used. Refer to **Remote Power Adapter Installation on page 2-3** or **Rack Mount Kit Installation on page 2-5**. If you are using remote power, connect the output of the remote power module to the PWR jack on the remote power adapter. 
13	Install the power module/redundant power module, if used. Refer to **Power Module Installation on page 2-7.** Connect the output of the power module/ redundant power module to the Access Point. 
14	Connect the power module into an AC outlet.
15	Verify power on by observing that some of the Access Point LEDs are flashing or lit.

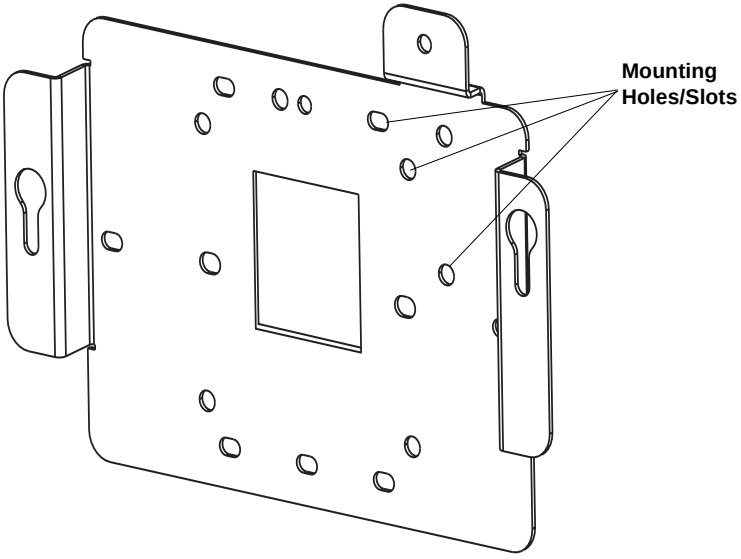
Step	Action
16	Secure the cover: • Position the cover over the Access Point. • Make sure the cover clears the antenna plug. • Push the cover down until all four snaps are secured. 

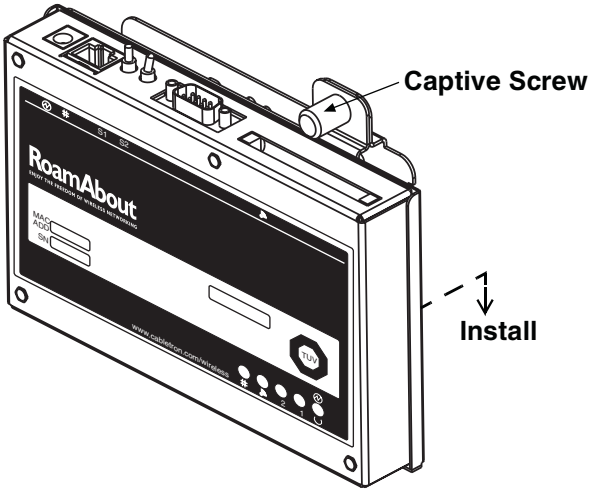
Surface Wallmount Installation

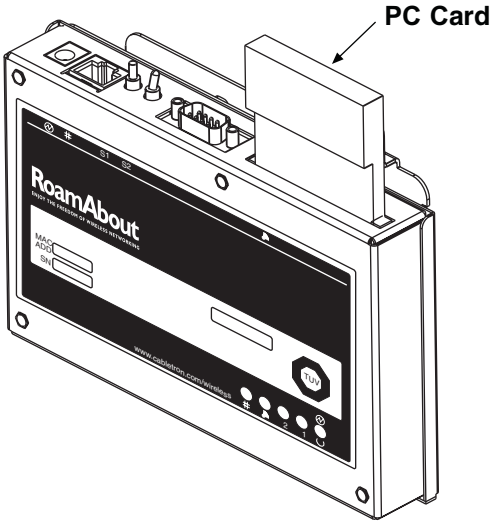
Follow the step-by-step procedure below to install the Access Point on the surface of a wall, cubical wall, vertical support structure, or ceiling.

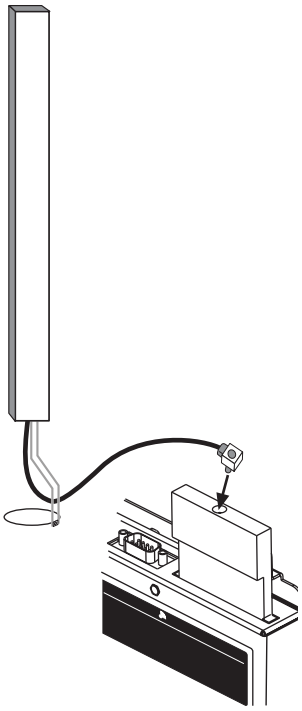
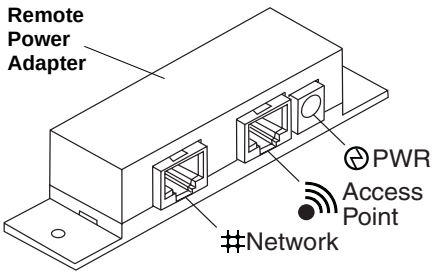
Step	Action
1	Make sure the site primary power for the Access Point conforms to the specifications detailed in **Chapter 2 - Cabling and Wiring**.
2	Select the optimum mounting location: • With easy access for inspection and service. • If using remote power, close to the 10BaseT Ethernet network cable connector. • If not using remote power, within five feet of an AC electrical outlet: **a)** If using redundant power (connecting both local power and remote power). ***or*** **b)** If using the local power option and not using the remote power option.

Step	Action
3	Remove the mounting bracket from the Access Point: • Completely loosen the captive screw. • Slide the bracket until the two screw slots are directly below the two mounting screws. • Lift and remove the bracket from the Access Point. 
4	Flatten the metal mounting bracket tab against the bracket, or remove the tab by bending it back and forth. 

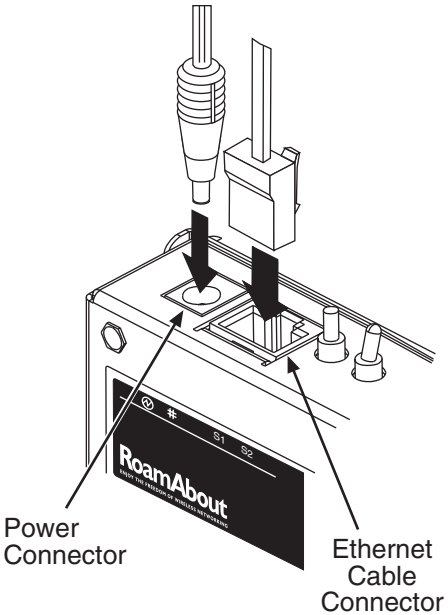
Step	Action
5	Secure the mounting bracket to the wall: • Locate at least two mounting holes/slots on the mounting bracket that line up with a wall stud. • Use two screws to secure the mounting bracket to the wall stud. • Use plastic anchors and screws, or self-anchoring screws to secure the mounting bracket to the wallboard. NOTE *Additional holes may be drilled in the bracket to accommodate your particular installation. Remove all drilled material from the area.* 

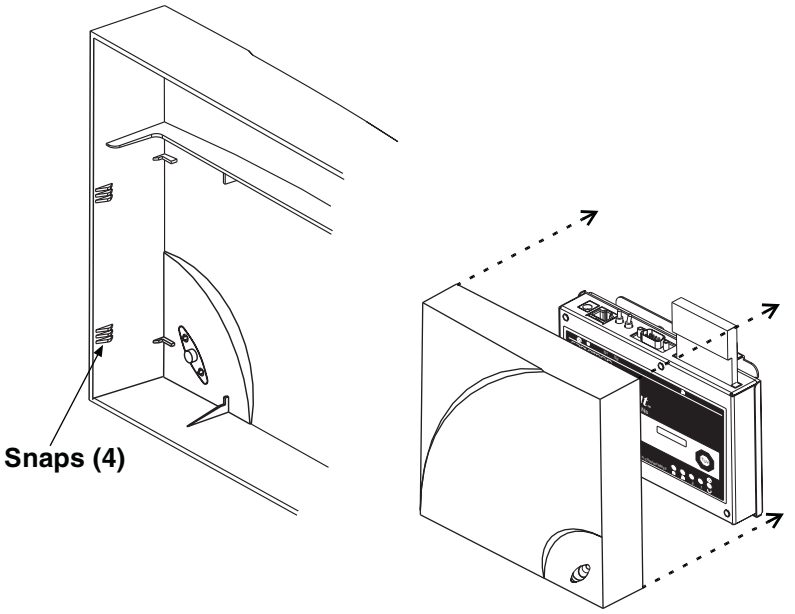
Step	Action
6	Secure the Access Point to the mounting bracket: • Insert the two Access Point shoulder screws into the two mounting bracket screw slots. • Slide the Access Point down. • Tighten the captive screw to secure the Access Point. 

Step	Action
7	Install the PC Card: • Position the card as shown below. • Carefully insert the card. • Press down firmly to seat the card. 

Step	Action
8	If you install the optional range extender antenna or outdoor antenna: • Remove the dust cover. • Insert the antenna plug into the PC Card connector. • Gently press down on the plug to secure the antenna connection. 
9	Install the remote power adapter or the rack mount kit, if used. Refer to **Remote Power Adapter Installation on page 2-3** or the **Rack Mount Kit Installation on page 2-5**. Connect the output of the remote power module to the PWR jack on the remote power adapter. 

Step	Action
10	Connect the 10BaseT Ethernet network cable. If you are using the remote power feature, label the end of the cable to the Access Point with: **CAUTION: Ethernet cable contains power. Do not use for other devices**. *If you are not using remote power, install the power module/redundant power module, if used; refer to* **Power Module Installation on page 2-7**.
11	Connect the power module into an AC outlet.
12	Verify power on by observing that some of the Access Point LEDs are flashing or lit.

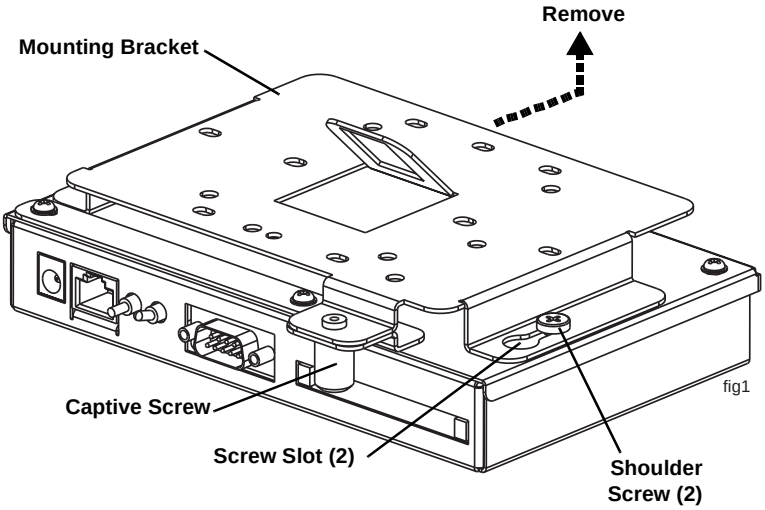
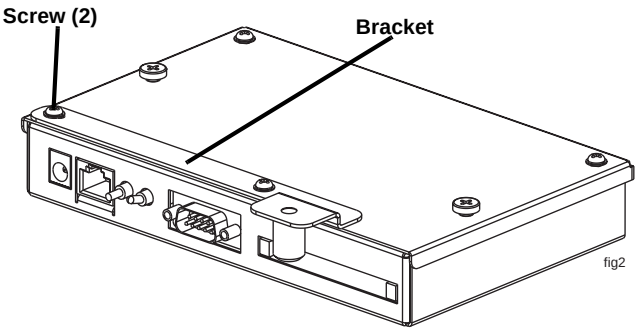


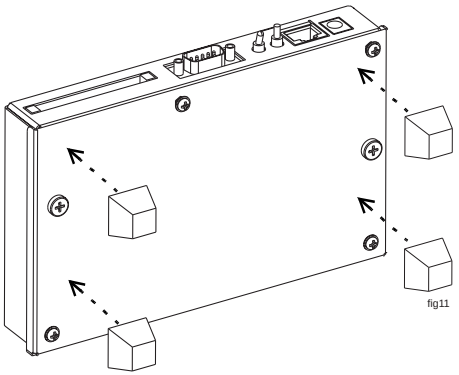
Step	Action
13	Secure the cover: • Position the cover over the Access Point. • Make sure the cover clears the antenna plug. • Push the cover down until all four snaps are secured. 

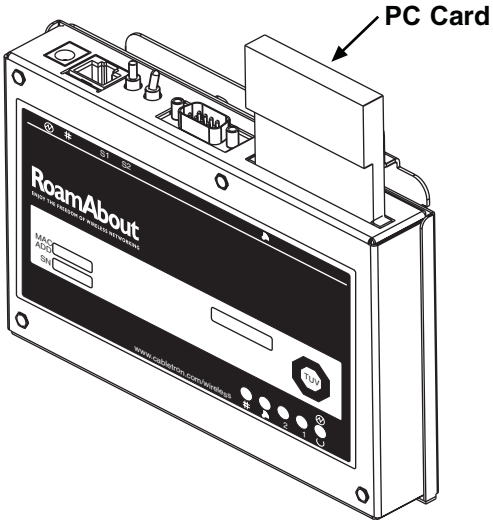
Desktop Installation

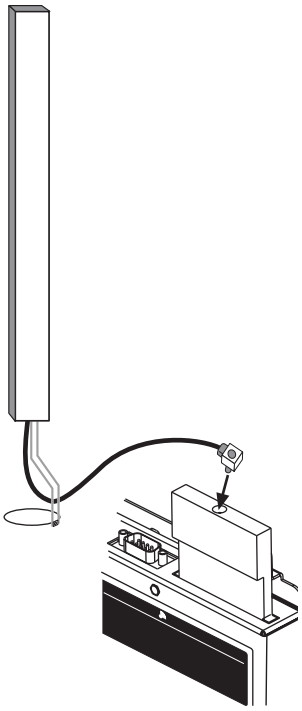
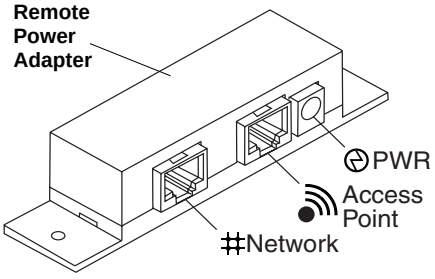
To install the Access Point on a desktop, do the following:

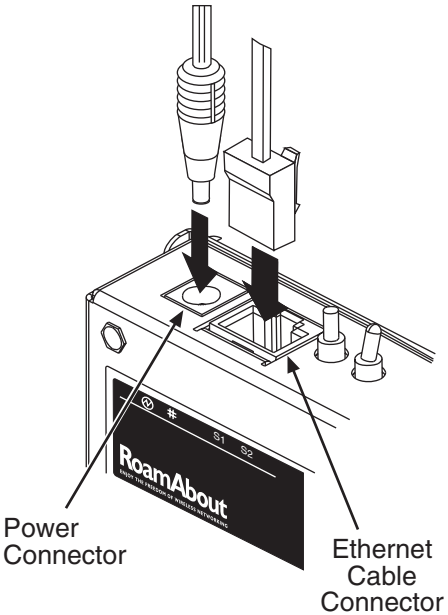
Step	Action
1	Make sure the site primary power for the Access Point conforms to the specifications detailed in **Chapter 2** - **Cabling and Wiring**.
2	Select a desktop location: • If using remote power, close to the 10BaseT Ethernet network cable connector. • If not using remote power, within five feet of an AC electrical outlet: **a)** If using redundant power (connecting both local power and remote power). ***or*** **b)** If using the local power option and not using the remote power option.

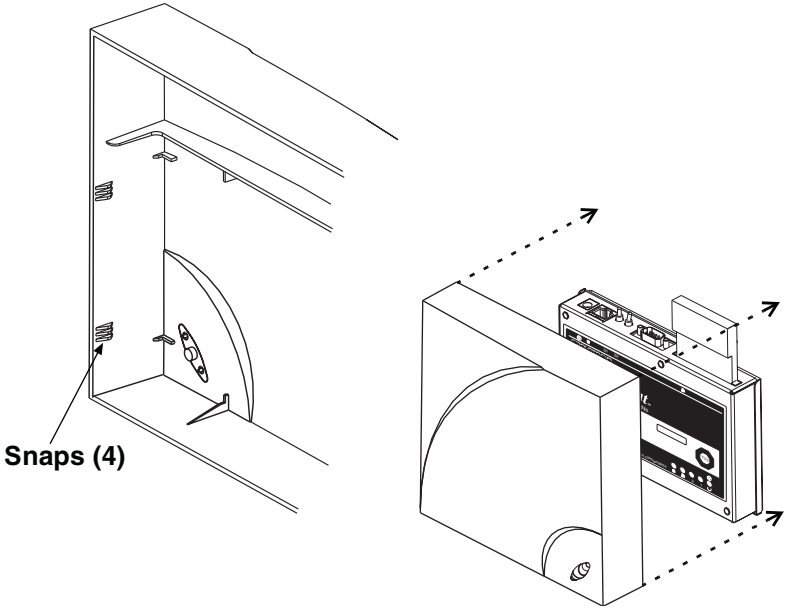
Step	Action
3	Remove the mounting bracket from the Access Point: • Completely loosen the captive screw. • Slide the bracket until the two screw slots are directly below the two shoulder mounting screws. • Lift and remove the bracket from the Access Point. 
4	Remove the captive screw bracket by removing two screws. 
5	Re-install the two screws.

Step	Action
6	Install the four rubber feet on the bottom of the Access Point. NOTE *Exact placement of each rubber foot is not crucial. For maximum stability, install each rubber foot as close to a corner of the Access Point as possible.*  fig11

Step	Action
7	Install the PC Card: • Position the card as shown below. • Carefully insert the card. • Press down firmly to seat the card. 

Step	Action
8	If you install the optional range extender antenna or outdoor antenna: • Remove the dust cover. • Insert the antenna plug into the PC Card connector. • Gently press down on the plug to secure the antenna connection. 
9	Install the remote power adapter or the rack mount kit, if used. Refer to **Remote Power Adapter Installation on page 2-3** or the **Rack Mount Kit Installation on page 2-5**. Connect the output of the remote power module to the PWR jack on the remote power adapter. 

Step	Action
10	Connect the 10BaseT Ethernet network cable. If you are using the remote power feature, label the end of the cable to the Access Point with: **CAUTION: Ethernet cable contains power. Do not use for other devices**. *If you are not using remote power, install the power module/redundant power module, if used; refer to* **Power Module Installation on page 2-7** 
11	Connect the power module into an AC outlet.
12	Verify power on by observing that some of the Access Point LEDs are flashing or lit.

Step	Action
13	Secure the cover: • Position the cover over the Access Point. • Make sure the cover clears the antenna plug. • Push the cover down until all four snaps are secured. 

Connecting a Device to the Console Port

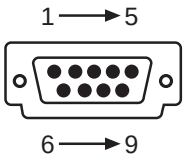
You can manage the Access Point using its console port or using the RoamAbout Access Point Manager program. You do not need to use the console port if you use the Access Point Manager. These management tools are described in the *RoamAbout 802.11 Wireless Networking Guide*.

You can connect a terminal or personal computer running terminal emulation software to the console port. Signals from the console port conform to the EIA-232D signaling standard at 9600 baud only. The port appears as a data terminal equipment (DTE) device. To connect a device to the Access Point console port, do the following:

1) Choose a device (terminal or personal computer) to connect to the Access Point.

2) Connect a null modem cable or equivalent to the device and the Access Point:

Pin	Assignment
1	Data Carrier Detect (DCD)
2	Receive Data (RXD)
3	Transmit Data (TXD)
4	Data Terminal Ready (DTR)
5	Ground
6	Data Set Ready (DSR)
7	Request to Send (RTS)
8	Clear to Send (CTS)
9	No connect



3) If using a terminal, configure the transmit and receive baud rates to 9600 baud only.

4) If using a personal computer, configure a terminal emulation application to use 9600 baud transmit and receive rates. The following is an example of configuring the Microsoft Windows Hyperterminal application:

a) Open the Hyperterminal application, which is usually located in **Programs→Accessories→Hyperterminal**.

b) Create a new connection. Depending on the system configuration, Hyperterminal could automatically prompt you for a new connection name. Choose a name that identifies the connection type, such as Access Point Console Port.

c) Ignore or cancel any prompts for modem or phone information.

d) In a **Connect Using** or similar field, select the port that is connected to the Access Point, such as COM1.

e) In the Port Settings window, enter:

— **Bits per second**: 9600

— **Data bits**: 8

— **Parity**: None

— **Stop Bits**: 1

— **Flow Control**: Hardware

To connect to the console port at a later date, open Hyperterminal and select **File→Open** to open the Access Point Console Port connection.

5) Press <**Enter**> a few times until the RoamAbout Access Point Installation Menu is displayed. The installation menu allows you to display and modify various Access Point and wireless networking parameters.

Verifying the Operation of the Access Point

The Access Point runs a series of self-tests on power-up and reports status using its LEDs (**Figure 3-1**). The diagnostics take several seconds to complete after power-up. **Table 3-1** describes the LEDs. If the Access Point LEDs indicate an error, verify that you have correctly installed the Access Point. **Table 3-2** describes the patterns, the most likely causes, and possible corrective actions. If the Access Point still fails, refer to the *RoamAbout 802.11 Wireless Networking Guide*.

The Reload/Reset button shown in **Figure 3-1** is used to download a new firmware image to the Access Point, and to reset the Access Point to the factory defaults. The toggle switch is reserved for future use. You need to write down the MAC address (in the **MAC ADD** box) for use when configuring the Access Point.

Once the Access Point is installed and powered on, refer to the *RoamAbout 802.11 Wireless Networking Guide* to set the Access Point parameters.

Figure 3-1: RoamAbout Access Point 2000 (Without Cover)

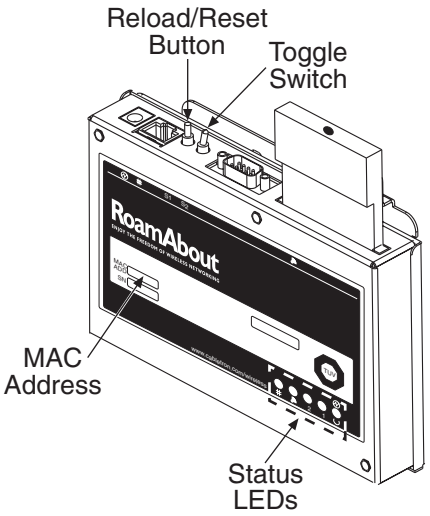


Table 3-1: Access Point LED Summary Table

Name	Description
Power/System OK	Lights when the Access Point has power and has passed the self-test. If the Access Point fails the test, the LED blinks at a steady rate.
Bridge State	Lights when the Access Point is forwarding packets.
Access Point Saturated	Lights when the Access Point is saturated. Saturation occurs when the Access Point cannot forward packets from the Ethernet to the wireless side due to the lower throughput of the wireless network. The degree of LED brightness indicates the level of saturation. The LED dims (and eventually extinguishes) as the network congestion is processed.
Wireless LAN Activity	Lights when packets are: • Received on the wireless port and forwarded to the Ethernet port. • Received on the Ethernet port and forwarded to the wireless port. • Addressed to or generated by the Access Point using the wireless port. Packets received and filtered are not shown. The average brightness of the LED indicates the level of activity on the wireless port. If the LED blinks in unison with the **Power/System OK** and the **Bridge State** LEDs, the wireless port has a fault that prevents the Access Point from establishing a connection to the network.
Wired LAN Activity	Lights when data is received on the Ethernet port. Data transmitted by the Access Point is not shown. Data traffic forwarded to the Ethernet port from the wireless port is not shown.

Table 3-2: Access Point LED Patterns

Wired LAN	Wireless LAN	Access Point Saturated	Bridge State	Power/ System OK	Meaning of LED Pattern
		2	1		
○	○	○	○	○	No power. Check the power connections.
○	●	●	○	●	Diagnostics failed. The Access Point automatically resets after one minute. If the pattern continues to display, contact technical support.
⊕	⊕	○	●	●	Normal operating mode.
⊕	⊕	○	○	●	Access Point is waiting for the spanning tree. No action is required.
⊕	⊕	⊕	●	●	Access Point is occasionally saturated. No action is required.
⊕	●	○	●	●	Cannot communicate with the wireless network. Verify that the PC Card is properly inserted.
○	⊕	●	●	●	Cannot communicate with the wired network. Verify that the Ethernet cable is properly connected.
⊕	●	●	●	●	Cannot communicate with the wireless or wired network.

● = On ○ = Off ● = Constant blinking ⊕ = Random blinking

Configuring the Access Point

If you are creating a new wireless network, refer to the *RoamAbout 802.11 Wireless Networking Guide* for the complete configuration procedures. If you are adding this Access Point to an existing wireless infrastructure network, the following sections provides the basic procedure to configure the Access Point. Refer to the *RoamAbout 802.11 Wireless Networking Guide* for details.

Using the RoamAbout Access Point Manager

If you manage Access Points with the RoamAbout Access Point Manager, do the following:

1) At the computer with AP Manager installed, start the AP Manager by clicking the **Start** button on the Windows desktop and selecting **Programs→RoamAbout→RoamAbout Access Point Manager**.

2) Select **File→Open** from the menu bar to open the appropriate group of Access Points, or to add to an existing managed list.

3) Click on the **Setup/Add New Access Point** button to setup/add an Access Point.

4) When prompted, click **Yes** to provide an IP address.

5) Enter the Access Point's wired MAC address (printed on the front of the Access Point under the plastic cover).

6) Assign the Access Point a valid IP address for your network.

7) Enter the Access Point SNMP read/write community name, which is by default **public**.

8) If necessary, change the default gateway and subnet mask. Click **OK** when completed.

   NetRider Loader starts. In approximately two minutes, you should see a BootP Request and Reply in the NetRider Loader window. Click **OK** and then click **Close**.

9) In the Identification dialog box, enter the text to describe the Access Point. Click the **Help** button for details. Click **OK** when completed.

10) In the Wireless Parameters dialog box, enter the name of the wireless network.

11) Enter a channel. If there are other Access Points whose coverage areas overlap, enter a channel that is at least five channels apart from the Access Points.

12) Enter a station name. The station name is displayed when clients run the RoamAbout Client Utility. Each Access Point should have a unique station name.

13) To implement your changes, select Reset from the main window, then select Reset with Current Settings. Allow approximately one minute for the Access Point to reset and complete its self-test.

Using the RoamAbout Access Console Port

If managing the Access Point with the console port, do the following:

1) Press the <**Return**> key at the terminal that is connected to the console port until the RoamAbout Access Point Installation Menu appears. If using a computer, start the terminal emulation program and connect to the console port.

2) To allow the AP Manager or other management tools using SNMP to remotely manage the Access Point, perform the following:

   a) Choose **Set IP Address** from the Installation Menu.

   b) Enter the IP address, subnet mask, and default gateway.

3) Choose **Module-Specific Options** from the Installation Menu, then choose **Set Wireless Configuration**.

4) Enter the name of the wireless network.

5) Enter a channel. If there are other Access Points whose coverage areas overlap, enter a channel that is at least five channels apart from the adjacent Access Points, or the same channel (some countries that do not have five channels, for example, France).

6) Enter a station name. This name is displayed when clients run the RoamAbout Client Utility. Each Access Point should have a unique station name.

7) To implement your changes, reset the Access Point by selecting **Reset with Current Settings** from the Installation Menu. Allow approximately one minute for the Access Point to reset and complete its self-test.